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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,606	11/13/2003	Rondell Paul Little JR.	71564-01	9006

7590 09/02/2004

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EXAMINER
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BOYKIN, TERRESSA M

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/712,606

Applicant(s)

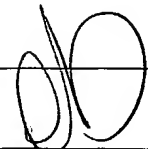
LITTLE ET AL.

Examiner

Terressa M. Boykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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**35 USC 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 6, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6177574 see abstract, claims.***

Applicants' claims 6, 7 and 8 disclose the use of benzoxazole, particularly benzoxazolyl stilbene and more particularly the use of 4,4 bis-2-benzoxazolyl-stilbene. Note, however, that US 6177574 discloses a process for the preparation of a mixture of benzoxazolyl-stilbene compounds by the reaction of unsubstituted 4,4'-bis(benzoxazol-2-yl)stilbene with a substituted o-aminophenol or o-aminonaphthol to obtain a mixture comprising the unsubstituted 4,4'-bis(benzoxazol-2-yl)stilbene and at least one substituted 4,4'-bis(benzoxazol-2-yl)stilbene, 4-naphthoxazol-2-yl-4'-benzoxazol-2-ylstilbene and/or 4,4'-bis(naphthoxazol-2-yl)stilbene. The reference clearly states therein that these mixtures are useful as fluorescent brightening agents and light stabilizers for synthetic polymeric materials such as polyesters, polyamide and polyolefin textile materials and shaped articles.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the particularly brighteners as claimed by applicants in the polyester composition since the reference US 6177574 discloses that the mixtures

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of unsubstituted and substituted 4,4'-bis(benzoxazol-2-yl)stilbene compounds are more effective than the unsubstituted compound for certain uses, e.g., for topical application to textile materials such as fibers, filaments and fabrics prepared from polyesters.

***Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4882412 see abstract, claims and discussion below.***

With regard to claim 24, the reference discloses a polyester polymer containing the residue of the UV absorbing benzo-derivative compound and shaped articles produced therefrom by applicants except for the particular use for container for foodstuffs or beverages.

However, **US 4882412** discloses that many products such as certain fruit juices, soft drinks, wines, food products, cosmetics and shampoos are deleteriously affected, i.e., degraded, by ultraviolet (UV) light when packaged in clear plastic containers which pass significant portions of the available light at wavelengths in the range of approximately 250 to 390 nm. Polyesters commonly used in the manufacture of packaging materials such as poly(ethylene terephthalate) typically absorb ultraviolet radiation of wavelengths up to about 320 nm. Thus, effective UV screening agents should absorb a substantial amount, e.g., up to about 90%, of ultraviolet light up to 390 nm, especially up to about 370 nm. The reference **US 4882412** further states that it is well known that polymers can be rendered resistant to degradation by UV light by physically blending in such polymers various UV light stabilizers such as benzophenones, benzotriazoles and resorcinol monobenzoates

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the composition as claimed by applicants for the purpose

of protecting materials including foodstuffs and beverages since the reference **US 4882412** notes that many products are well known to be deleteriously affected by ultraviolet degradation and any container which provides protection of said foodstuff or beverage would be obvious and desirable.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***Claims 1, 2, 3-5, 9-15, 17, 19-21, 22, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by USP 6773104.***

With regard to applicants' claims 1 and 22, **USP 6773104** recognizes that ultraviolet rays from the sun or from man-made sources degrade many materials by breaking their molecular bonds and thus discloses a solution to this problem via a two-layered coating system containing a polyester resin and using an ultraviolet absorber in its inner layer (called the blocking layer), furthest away from the source of ultraviolet exposure, with a fluorescent material that reflects ultraviolet radiation back as blue light. The system

provides the desired protection by combining an optical brightener with an ultraviolet radiation absorber which raises the cutoff wavelength and increases blue light, rather than absorbing blue light as a longer wavelength cutoff ultraviolet absorber would normally do. The reference recognizes that by preventing ultraviolet radiation from reaching materials and surfaces, the weatherability and resistance to physical degradation is greatly improved.

The ultraviolet absorber in the inner layer is used in sufficient concentration to have an ultraviolet cutoff, which can be extended with the fluorescent material. The ultraviolet block material of the present invention has transmittance of the light within a range of wavelength of 300-380 nm of 10% or less, preferably transmittance of the light within a range of wavelength of 300-390 nm of 10% or less, and, particularly preferably, transmittance of the light within a range of 300-400 nm of 10% or less, while it has a transmittance of the light within a range of 420-800 nm wavelength of 90% or more, or, preferably, 95% or more.

The reference discloses optical brighteners. Typical optical brighteners disclosed are disulphonates, tetrasulphonates, and hexasulphonates. These are water soluble optical brighteners. Such optical brighteners are typically used in textiles at very low concentrations of less than one percent by weight and their purpose is to reduce the yellowness of a material, dye, plastic, etc. The present invention provides the desired protection by combining an optical brightener with an ultraviolet radiation absorber which raises the cutoff wavelength and increases blue light, rather than absorbing blue

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light as a longer wavelength cutoff ultraviolet absorber would normally do.

With regard to claims 3, 4, and 5 note that the reference discloses that examples of a fluorescent material are materials of a diamino stilbene type, an imidazole type, a thiazole type, an oxazole type (such as 2,5-bis[5-tert-butylbenzoxazol-2-yl]thiophene, a triazole type, an oxadiazole type, a thiadiazole type, a *coumarin* type, a naphthalimide type, a pyrazoline type, a pyrene type, an imidazolone type, a benzidine type, a diaminocarbazole type, an oxacyanine type, a methine type, a pyridine type, an anthrapyridazine type, a distyryl type and a carbostyryl type and the like. Preferably, an oxazole type is used. With regard to an ultraviolet radiation absorber, that which mainly absorbs the light within a range of 300-380 nm may be exemplified and that of a benzophenone type, a benzotriazole type, a salicylic acid type and a hydroquinone type can be used. Preferably, a benzophenone type and a benzotriazole type are used and, particularly preferably, a benzotriazole type is used.

With regard to the amount of ultraviolet light absorber and the optical brightener employed as noted in applicants' claims 9 through 15, note the reference states that the of the ultraviolet radiation absorber used for the base material is usually not less than 5% by weight, preferably not less than 6% by weight or, more preferably not less than 10% by weight and usually not more than 30% by weight or, preferably, not more than 25% by weight. When the amount of the ultraviolet radiation absorber is too small, it is not possible to make the light transmittance of ultraviolet region 10% or less while, when it is too much, there is a possibility that the ultraviolet radiation absorber bleeds out. Further, the amount of the fluorescent material contained for the base material

is usually not less than 3% by weight, preferably not less than 6% by weight or, more preferably, not less than 10% and usually not more than 30% by weight or, preferably, not more than 25% by weight. When the amount of the fluorescent material is too small, it is not possible to make the light transmittance of ultraviolet region of not shorter than 380 nm 10% or less while, when it is too much, there is a possibility that the fluorescent material bleeds out.

With regard to applicants' claims 17, 19-21, note that the reference states throughout that a film may be produced and employed. Further, the substrate itself, may be anything which has been known and has some heat resistance and strength. Its examples include polyester film such as polyethylene terephthalate, polystyrene film, polypropylene film, polysulfone film, polyphenylsulfide film and polyethylene naphthalate film and preferred ones are polyester film, paraffin paper, glassine paper and condenser paper. Among the polyester film, particularly preferably used one is a polyethylene terephthalate film. Such a substrate may be either in a sheet or in a continuous film. Examples of the base material constituting the ultraviolet block material are synthetic resin, oil, gelatin and starch, which are not colored at the visible light region, and, form a resin layer as a result of drying and/or hardening when applied on a substrate. To be more specific, polyester resin, polystyrene resin, acrylate resin, polyurethane resin, acrylurethane resin, vinyl chloride resin, polyamide resin, vinyl acetate resin, epoxy resin, phenoxy resin, and cellulose type resin may be exemplified.

Thus the reference discloses a composition comprising each of the components as noted by applicants, i.e. a polyester, an ultraviolet absorber and an optical brightener

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with the appropriate concentrations therein. With regard to applicants' claims 2 and 23, any properties or characteristics inherent in the prior art, e.g. CIE b\* value, although unobserved or detected by the reference, would still anticipate the claimed invention. Note In re Swinehart, 169 USPQ 226. "It is elementary that the mere recitation of a newly discovered...property, inherently possessed by things in the prior art, does not cause claim drawn to those things to distinguish over the prior art". Thus in view of the above, there appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### **Correspondence**

**Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebs/index.html> or 1-866-217-9197.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( 571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb

A handwritten signature in black ink, appearing to read "Terressa Boykin", with a small mark above the final letter.

Examiner Terressa Boykin

Primary Examiner

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